A STUDY TO EVALUATE THE EFFECTIVENESS OF HEIFER SKIN TAP TECHNIQUE ON PAIN ASSOCIATED WITH INTRA MUSCULAR INJECTION AMONG HOSPITALIZED ADULTS IN SELECTED HOSPITAL AT COIMBATORE

COIMBATORE

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BY

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APRIL 2015

VIVA VOICE

1. INTERNAL EXAMINAR…….……..……
2. EXTERNAL EXAMINAR…….……..…..……...

This is to certify that the dissertation entitled **"A Study To Evaluate The Effectiveness Of Heifer Skin Tap Technique On Pain Associated With Intra-Muscular Injection Among Hospitalized Adults In Selected Hospitals At Coimbatore"** is a bonafide work done by **Abhija. P.V.**, **Annai Meenakshi College of Nursing** in partial fulfillment of the university rules and regulation for award of **M.Sc., Nursing Degree Course** under my guidance and supervision during the academic year **April 2015.**

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DEDICATION

****

"I dedicate this book to

God almighty who blessed me to finish this work successfully."

I dedicate this book for my husband

MR. HARIKRISHNAN V K

Who made my life purposeful and meaningful

I dedicate this book to my lovable Parents

Mr. VIJAYAN P G

&

Mrs. REMANI T K,

Those who providing me with best education

I dedicate this book to my beloved sister

Ms. AKHILA P V

Who gave me a marvelous emotional support

I dedicate this book to my mother-in-law

Mrs. KRISHNAMMA

For her love and support

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ABSTRACT

INTRODUCTION: Hospitalized adults undergoing intramuscular injection have pain. In this context, complementary therapy like Heifer skin tap technique has its own significance, thus enhancing the scope of nursing. OBJECTIVE: To evaluate the effectiveness of Heifer skin tap technique on pain associated with intramuscular injection. DESIGN: A quantitative approach using pre experimental one group pre and post test design. PARTICIPANTS: 100 hospitalized adults undergoing intramuscular injection have pain using non-probability convenient sampling techniques from Nataraj hospital. INTERVENTION: Heifer skin tap technique is administered 3 times before inserting the needle and 3 times after removing the needle. TOOLS: Standardized MCAFFERY 0-10 numerical pain scale to assess the level of pain associated with intramuscular injection. RESULTS: Analysis among Experimental group by using paired 't' test found significant value 54.02 at $p<0.05$ level. CONCLUSION: Heifer skin tap technique is effective on pain associated with intramuscular injection among hospitalized adults.

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CHAPTER I

INTRODUCTION

"Pain is an uncomfortable feeling that even a tiny amount of it is enough to ruin every enjoyment"

-Will Rogers

Nursing is a profession within the health care sector focused on the care of individuals, families, and communities. They attain, maintain, or recover optimal health and quality of life. Nurses help people in every walk of life and every part of life. A nurse career can take many forms, from working in hospital with gravely ill patients; Nurses help individuals from before birth to the time of death; and even help family members cope with the loss of a loved one, imaginable situation involving the health or illness of a person. Nurses may be differentiated from other health care providers by their approach to patient care, training, and scope of practice. Nurses develop a plan of care, working collaboratively with physicians, therapists, the patient, the patient's family and other team members, that focus on treating illness to improve quality of life.

An illness is the response of the person to a disease; it is an abnormal process in which the person's level of functioning is changed when compared with a previous level. A disease is traditionally diagnosed and treated by a physician, while nurses focus on the person with an illness. Medications are one of the main options in the cure, treatment and prevention of numerous medical conditions and illness.

Medications or drugs are introduced into the body by several routes. They may be taken by mouth (orally), given by injection into a vein (intravenously), into a muscle (intramuscularly), into the space around the spinal cord (intrathecally), or beneath the skin (subcutaneously), Placed under the tongue (sublingually) or between the gums and cheek (buccally), inserted in the rectum (rectally) or vagina (vaginally), placed in the eye (by the ocular route) or the ear , sprayed into the nose and absorbed through the nasal membranes (nasally), breathed into the lungs, usually through the mouth (by inhalation) or mouth and nose (by nebulization), applied to the skin (cutaneously) for a local (topical) or body wide (systemic) effect, delivered through the skin by a patch (transdermally) for a systemic effect.

According to WHO (2006) "Intramuscular injection is an administration of medication parenterally through a skin puncture by a syringe and a needle deep into a large muscle of the body for prophylactic or curative purposes".

Intramuscular injections are used to deliver drugs and vaccines. They are a common practice in modern medicine. Several drugs and almost all inactivated vaccines are delivered this way. Intramuscular injections are used when other types of delivery methods such as oral, intravenous etc are not recommended.

The speed of absorption is faster for intramuscular injection compared to subcutaneous injection. This is because the muscle tissue has a greater blood supply than the area just under the skin. Muscle tissue may also hold a larger volume of medication than subcutaneous tissue. Intramuscular injection may be used instead of intravenous injection because some drugs are irritating to veins. Sometimes, a suitable

vein cannot be located. It may be used instead of oral delivery because some drugs are destroyed by the digestive system when a drug is swallowed.

An intramuscular injection is a technique used to deliver a medication deep into the muscles. This allows the medication to be absorbed into the bloodstream quickly. There are 4 main sites that can be used for IM injections. They are thigh (vastus lateralis muscle), top of upper arm (deltoid muscle), hip (ventrogluteal or gluteus medius muscle), buttocks (dorsogluteal muscle)

Thigh (vastus lateralis muscle). This site is located by dividing the thigh into thirds between the knee and hip. The site is located in the middle, outer sides of the thighs. This site is usually used for infants and toddlers. The maximum amount of medicine that should be injected in this muscle is 4 mL.

Top of upper arm (deltoid muscle). A method to locate this site is to place the palm of a hand centered on the person's shoulder. The fingers should be pointing toward the floor. The thumb and the other fingers are separated to make an upside down V shape. The IM injection should go in the middle of the V shape. This site is usually used for children age 3 and older and adults. This site can be used in children under 3 years of age if the muscle mass is adequate. The maximum amount of medicine that should be injected in this muscle is 1 mL.

Hip (ventrogluteal or gluteus medius muscle).A method to locate this site is to place the heel of the hand on the person's hip, on the upper side of the leg. The hand should be placed so the fingers are facing person’s head. Then feel the upper edge of

the bony pelvis with ring finger and little finger. Point thumb to the groin. Spread index finger and middle finger into a V shape and give the injection between those fingers. This site can be used for children age 7 months and older and adults. There is no maximum amount of medicine for this injection site.

Buttocks (dorsogluteal muscle). A method to locate this site is to divide one buttock into 4 quarters. The quarters are formed by dividing the buttock in half from top to bottom and also in half from side to side. The injection should be given in the upper, outer quarter. This site can be used for children and adults. The maximum amount of medicine that should be injected in this muscle is 4 ML.

Administering medication intramuscularly can produce a variety of serious adverse effects including pain at the injection site, skin and tissue trauma, allergic reactions, abscess, hematoma, injury to the blood vessels, nodules etc. Among this, pain at the injection site or the localized muscular pain is the most common adverse effect experienced as a result of intra muscular injection.

The International Association for the Study of Pain (1998) states "Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage".

Pain is more than a single physiological sensation caused by specific stimulus. The physiology of pain includes transduction, transmission, perception, modulation. Cellular damage from any stimuli (thermal, mechanical, electrical) releases pain producing substances such as histamine, bradykinin, and potassium. This stimulation

causes an action potential on nociceptors, thus converting the original stimuli into a pain impulse. This conversion is known as transduction. Pain stimuli produce nerve impulses that travel along afferent peripheral nerve fibers. They are primarily two types of peripheral nerve fibers: the fast, myelinated A- delta fibers and the small, slow unmyelinated C fibers. This transmits the impulses from the periphery to the dorsal horn of the spinal cord, where an excitatory neurotransmitter, substance P, is released. Pain stimuli travel through nerve fibers in the spinothothalamic tract, cross to the opposite side of the spinal cord, and then travel up the spinal cord. After the pain impulse ascends the spinal cord, information is sent quickly to higher centers in the brain. As the pain impulse reaches the cerebral cortex, the brain interprets the quality of the pain and processes information from past experience, knowledge, and cultural association of the perception of the pain. Perception is the point at which a person is aware of pain. Once the brain perceives the pain, there is a release of inhibitory neurotransmitters such as endogenous opioids, serotonin, norepinephrin, and gamma aminobutaric acid, which work to hinder the transmission of pain and help produce an analgesic effect. This inhibition of the pain impulse is the fourth process known as modulation. A protective reflex may also occur with pain reception. A –delta fibers send sensory impulses to the spinal cord, where they synapse with spinal motor neurons. The motor impulses travel via a reflex arc along efferent nerve fibers back to a peripheral muscle near the site of stimulation; thus bypassing the brain. Contraction of the muscle leads to a protective withdrawal from the source of pain.

There are two main causative groups which injection pain can be categorized.

1. Pain due to route of administration
2. Pain due to the substance being injected

Pain due to Route of Administration

Invasiveness of Injection: The initial cause of injection pain that may be experienced is quite simply the fact that an IM injection itself is an invasive procedure, in that the body's natural barrier of skin is being penetrated by a sharp needle and any further cellular content along the needle's path is being sheared. This in itself, although relatively invasive, can cause some pain. This pain tends to be initial, however due to the design of sterile needles for injection, the curved nature of the needle point allows for minimal pain

Opening a new IM injection site: When a new muscular site is invaded and a volume of substance is injected, there is often some soreness associated with such an injection. The muscle group is not used to containing an additional volume of a substance, thus pain can result. This is usually only experienced when a site is first used for an IM injection. This is why when using a new site it is encouraged to inject a smaller amount initially, from 0.5-1ml dependent upon muscle size. Such pain and soreness usually ceases after a site has received at least one injection.

Physical location of injection: Often when injecting a substance, the physical location where the needle releases the substance, can result in discomfort after the injection. This is most likely due to the substance (especially if oil based and slowly absorbed) sitting in between muscle groups or in a small muscle, as this will cause

more pain than being injected into the middle of a muscle or a larger muscle. This can happen from time to time even with experienced users.

Volume of substance injected: The volume of injection will also make a significant difference to any soreness and pain experienced. Generally larger volumes are better tolerated in larger muscle groups (gluteus, quadriceps, etc), with smaller muscle groups (biceps, triceps, etc) fair better with smaller volumes (<2ml). When the volume of substance injected is increased, the risk of inflammatory response and soreness is increased. Very large volumes (>5-6ml, especially of oil-based substances) are not advised due to the risk of developing a sterile abscess.

Pain due to the substance being injected

Abscess development: As with any substance, unless it is sterile there is a high risk of developing an internal infection known as an abscess. This will result in large amount of swelling, redness, flu-like symptoms and increased lymphocytes thus increased inflammation resulting in a fair degree of pain experienced. The risk of such infections being developed when using completely sterile product is very low.

Solvent concentration of substance: The concentration and type of solvents used in the preparation of the substance to be injected will affect any pain and soreness that will be experienced injection pain It is an important point to make that pain resulting from solvent concentrations used is most likely to commence quite soon after the injection, from a few minutes to a few hours maximum. Pain that takes longer than this to develop is usually due to other factors.

Concentration of active product: This is probably the most prevalent cause of injection pain experienced by anabolic steroid users. This is most likely due to the demand for underground laboratories to produce more concentrated steroid preparations (high mg/ml of hormone) to reduce number and volumes of injections.

Other causes for Intramuscular Injection Pain

Tissue Irritation: This is probably the most likely cause of injection pain and the least serious. Tissue irritation is likely to start 12-24 hours after injection, pain can be mild to moderate depending on the level of tissue irritation and the volume injected. The injection site is likely to swell within the muscle, maybe red and likely to be warm and very firm to the touch. The pain and swelling will start to fade after 72 hours and can last over a week in the worst cases.

Hitting the lymphatic system: It is very rare. The lymphatic system is as vast as the circulatory system but the standard injection sites (ventro-gluteal, dorsogluteal, deltoid and vastus lateralis) are generally void of lymphatic nodes. The swelling will come on very fast and be extensive. It is also likely to "travel" along the lymph system to the next lymph gland. This is most noticeable with a vastus lateralis shot where the swelling tracks down towards the back of the knee. Unlike the edema experienced with tissue irritation (within the muscle only) the edema with a lymphatic puncture will be both inter and intra-muscular with a moderate amount of swelling just underneath the skin giving it a softer puffy feel.

Infection and abscess: This is the most serious reason for injection pain. An infection will start in the same manner as tissue irritation with local pain and swelling,

with heat and redness around the muscle. The major difference is that after 72 hours tissue irritation should start to subside, if the area is indeed infected this pain and swelling will get worse. The swelling will change in nature becoming more systematic and edema will start to form under the skin becoming softer and spongier.

Pain is a stressful event that can alter a person's lifestyle and affect psychological well being. Pain will make behavioral effects and influence on the activities of daily living. Behavioral indicators of effects of pain include vocalizations (crying, gasping, and grunting) facial expressions (grimace, clenched teeth, wrinkled forehead, tightly closed or widely opened eyes or mouth, lip binding) social interactions (avoidance of conversation, focus only on activities for pain relief).

Pain is complex, so there are many treatment options -- pharmacologic or non pharmacologic including physical and behavioral measures such as touch, massage, Heifer skin tap technique, application of heat and cold, aroma therapy, acupressure/ acupuncture, relaxation, hypnosis, distraction etc are proved effective in reducing pain.

These forms of measures are aimed at pain relief or prevent other complications. Heifer Skin Tap Technique was proposed by Joanne Helfer. Heifer skin tap may not only help to relief pain due to intramuscular injection but also reduce needle anxiety, and relax the skin and for distracting the patient. The mechanism of heifer skin tap technique is gate control theory. In Heifer skin tap technique while doing tapping before intramuscular injection the nervous system will shut down the

sensory gate and the pain sensation of the injection will not reach the brain. So the injection pain goes unnoticed.

Wall and Malzack (1965) states that in gate control theory, Information from ascending Aβ afferent fibers and pain messages carried along Aδ and C afferent fibers enter the dorsal horn of spinal cord. Sensory information coming from Aβ fibers is transmitted to higher centers in brain.“Pain message" carried along Aδ & C fibers is not transmitted to second-order neurons and never reaches sensory centers of the brain.

Heifer skin tap to reduce pain associated with intra muscular injection are not complicated and can be done without any special equipment .The benefits of heifer skin tap are numerous and factual. The benefits are

- relax the skin and reduce needle anxiety
- diminish pain
- provide superficial vasodilatation,
- Giving anaesthetic effect.

Jay and Jennel., (1999) conducted an experimental study on effectiveness of heifer skin tap technique on pain perception after intramuscular injection among hospitalized patients in USA by using VAS. The study concluded that that Heifer Skin Tap technique helps to reduce the pain during intramuscular injection.

Need for the Study

Pain is a common and a ubiquitous sensation for children and adult. Every person has his or her own perception of pain.

Injections are the most frequent painful medical procedure during hospitalization. Injections are the most common reason for iatrogenic pain. With the steadily increasing number of recommended injections, there has been a concomitant increase in concern regarding the adequacy of pain management.

A fundamental principle of responsible medical care is ‘do not harm’ since pain is harmful to everyone, the caregivers are committed in preventing harm to their patients. Pain is a major source of distress for patients and their families as well as health care providers.

US census bureau (2011) estimated that injections are among the most frequently used medical procedures with an estimated 12 billion intramuscular injections administered throughout the world on an annual basis , of these 5% or less are for immunization and rest are given for curative purposes.

Department Of Health And Human Service, India (2010) stated that 96% of intramuscular injections given by private doctors were of antibiotics, vitamins, and analgesics. The prevalence of intramuscular injection range is between 1.7-11.3 injections per person per year.

WHO (2009) a conservative estimate of average number of intramuscular injections ranged from 0.9 to 8.5 per person per year, with a median of 1.5 intramuscular injections per person per year.

WHO (1999) the prevalence of intramuscular injection in European countries was 5.6-11.3 injection per person per year. The lowest annual number of intramuscular injections were in America i.e., 1.7-1.9 injections per person per year.

WHO (2006) estimated that 16 billion injections are given per worldwide. It was estimated that on an average each person in the developing countries receive 1.2 billon intramuscular injections per year.

Institute of Medicine of the National Academies America (2010) estimated that 2 million intramuscular injections are given every year.

National Center for Health Statistics, U.S.A report (2008) indicates that more than 1.5 billion people worldwide suffer from severe pain and that approximately 3-4.5% of the global population suffers from mild to moderate pain, due to intramuscular injection.

United States (2006) highlights pain associated with intramuscular injection among adults. It revealed that adults aged 45-64 years were the most likely to report pain lasting more than 24 hours (30%). (25%) of young adults of age group 20-44 years reported pain lasting more than 12 hours, and adults age group 65years and over were reported pain lasting more than two days (21%).

National institute of health (2007) estimated that in Chennai there is approximately 0.79% or 7852 million people suffering pain associated with intramuscular injection.

Arif valliani., Bilawal Ahemed., Azfar Saleem., (2012) conducted a descriptive study to determine the observable behavior reaction in young adult to entry the vaccine fluid and the pain of needle puncture among 24 young adults in Mumbai by using visual analogue scale. The study revealed that the anxiety of young adults was significantly higher prior to the procedure. The study concluded that pain management is needed prior to the injection procedure.

Chang A.M., Chung T.H, 2012) conducted an experimental study to compare pain response of adults who receive intramuscular vaccination in deltoid muscle versus the pain response of those who receive in the gluteal muscle among 185 adults in Turkey by using numerical pain scale. The study concluded that the pain response of adults was similar in each group.

Simonsen L., Kane A ., LioydJj., Zafferan M., (2011) conducted a randomized control trial to compare the acute pain response of adults during intramuscular injection using a slow standard of care injection versus rapid pragmatic injection among 113 adults in Canada by using visual analogue scale. The study concluded that mean visual analogue scale score were higher for standard group compared to pragmatic group.

Luiz Carlos., Ribeiro Lamblet., Edilson Sant Anna Meria., Silvanatorres., Barbara Carvalho., (2011) conducted a randomized clinical trial to assess pain and bruising in medicines administered by means of subcutaneous and intramuscular needle injection among 340 adults in Brazil by using numerical pain scale. The study concluded that the pain score were higher in intramuscular injection group comparing to subcutaneous group.

Cereal lover., ConwayA J., Turner L., (2011) conducted a descriptive study on patients perception with spinal, intramuscular and intravenous injection among 46 adults in Italy by using numerical pain scale. The study concluded that 50%said the most painful injection was intramuscular injection 39% were said intravenous injection was most painful and for 11% of adults' spinal injection hurt most.

Sartorius G., Fennelle., Turner.L., (2010) conducted an experimental study on factors influencing time course of pain after depot oil intramuscular injection among 125 men in America by using colored visual linear analogue scale. The study revealed that pain was reported by 80% of men ,and the pain was more severe in men who had an early painful injection. The study concluded that post injection pain is influenced by early painful injection experience.

Ashely Walden., Michele Vangilder., (2010) conducted a case study to determine the frequency and magnitude of distress seen among 60 patients in the preparatory and procedural phases of intramuscular injection in USA by using visual analogue scale. The study concluded that 21% of patients suffered severe distress in preparatory phase and 69% of patients suffered severe distress in procedural phase.

Faden SZ, Walker DR.,(2011) conducted a survey among the medical and nursing staff of a tertiary care hospital in Australia to determine their perception of pain and distress in patients, during common procedures in the emergency department. The staff perception of pain and distress in patient were measured by using a 10 cm visual analogue scale. Intramuscular injection was perceived by the emergency staff as one among the most painful procedure.

Heifer skin tap technique is a simple intervention which can bring about a great deal of change in the level of pain associated with intramuscular injection. Hence the researcher felt need to assess the level of pain associated with intramuscular injection among hospitalized adults and evaluate the effect of Heifer skin tap technique on reducing level of pain associated with intramuscular injection.

Statement of the Problem

A Study to Evaluate the Effectiveness of Heifer Skin Tap Technique on Pain associated with Intramuscular Injection among Hospitalized Adults in Selected Hospital at Coimbatore.

Objectives

The objectives of the study were

- To assess the pre and post test level of pain associated with intramuscular injection among hospitalized adults.
- To evaluate the effectiveness of Heifer skin tap technique on level of pain associated with intramuscular injection among hospitalized adults.

- ❖ To determine the association between post test level of pain associated with intra muscular injection among hospitalized adults with their selected demographic variables.

Hypotheses

H1: There is a significant difference between mean pretest and post test level of Pain associated with intramuscular injection among hospitalized adults.

H2: There is a significant association between level of post test pain associated with Intramuscular injection among hospitalized adults and their selected demographic Variables.

Operational definition

Evaluate

Evaluate means to determine the importance, effectiveness or worth.

In this study evaluate refers to the determination of level of pain associated with the administration of intramuscular injection.

Effectiveness

Effectiveness is the capability of producing a desired result.

In this study it refers to the outcome of Heifer skin tap technique in terms of pain associated with intramuscular injection.

Heifer Skin Tap Technique

Heifer skin tap technique is the administration of intramuscular injection by tapping to ventrogluteal site of buttock by using palmer aspect of the hand about three

times and inserting the needle without the feeling of pain and removing the needle by tapping the area again three times.

In this study it refers to the administration of intramuscular injection by ventrogluteal site of buttock by relaxing the muscle for 16 times and tapping with palmer aspect of the hand about three times and inserting the needle without the feeling of pain and removing the needle by tapping the area again three times.

Pain

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage.

In this study it refers to feeling of discomfort of patients due to the insertion of needle and administration of medication. It is measured by using self reported standardized MCAFFERY 0-10 numerical pain scale.

Intramuscular injection

Intramuscular injections are the Introduction of hypodermic needle into muscle to administer a medication.

In this study it refers to the introduction of needle into the ventrogluteal muscle of the buttock to administer medication.

Hospitalized Adult

In this study hospitalized adult refers to a person who is admitted in the inpatient department with the age group of 20-45 years getting intramuscular injection.

ASSUMPTIONS

- Intramuscular injection is a painful procedure.
- Heifer skin tap will reduce the pain due to intramuscular injection.
- It has no side effects.
- Heifer skin tap is not harmful to the patient.
- Every individual is unique and responds in a way to painful procedure.

DELIMITATIONS

- The study is delimited to a selected hospital in Coimbatore.
- The data collection period was delimited to a period of 4 weeks.

PROJECTED OUTCOMES

- The study will help the nurse to assess the level of pain associated with intramuscular injection among hospitalized adults by using standardized MCAFFERY 0-10 numerical pain scale.
- The study will help the nurse to identify the effectiveness of Heifer skin tap technique on pain associated with intramuscular injection.
- The study will help the nurse to practice Heifer skin tap technique to reduce pain associated with intramuscular injection.
- The findings of the study will help the nurse to motivate the co-workers and student nurses to practice Heifer skin tap technique to reduce pain associated with intramuscular injection.

CHAPTER II

REVIEW OF LITERATURE

Review of literature is an important step in the development of any research project. A thorough literature review provides a foundation upon which to base new knowledge and generally is conducted well before any data are collected in a quantitative study.

Polit and Hungler (2004) stated that literature review is a critical summary of research on a topic of interest, often prepared to put a research problem in context or as the basis for an implementation projects.

In this study the literatures were reviewed and organized under the following headings;

- Studies related to prevalence of pain associated with intramuscular injection.
- Studies related to effectiveness of Heifer skin tap technique on pain associated with intramuscular injection.

Studies Related to prevalence of pain associated with intramuscular injection.

Dilek Kara, Suerari., (2013) conducted a comparetive study on dorso gluteal or ventro gluteal site is more painful in intramuscular injection among 70 adults in state hospital in Turkey by using visual analog scale. The study revealed that the average

pain score of patients after injections to the ventro gluteal site was less than comparing to dorso gluteal site. The study concluded that intramuscular injection of diclofenac sodium administered to the ventro gluteal site would feel less painful than administered to the dorso gluteal site.

Emel Tugreel, Leyla Khorshid., (2013) conducted a quasi experimental study on effect of pain intensity of injection sites and speed of injection associated with intramuscular penicillin among 60 patients in Turkey by using numerical pain scale. The study revealed that no difference in pain was perceived by participant between the two injection duration at either the dorso gluteal or ventro gluteal site. The study concluded that intramuscular penicillin can be administered to either site over 5 s/ml or 10 s/ml duration.

Inman SL, Faut.Callahan M, Swanson BA, Fillingim RB., (2012) conducted an experimental study on sex differences in pain responses to intramuscular injection for low back pain among 57 patients (37 women 20 men) in American pain clinic of regional medical center by using standardized Nordic questionnaire. The study revealed that no sex difference in the magnitude of treatment responses emerged however specific dimensions of pain coping were associated with treatment response in sex dependent manner. The study concluded that the pain coping was differently associated with outcomes after intramuscular injection in women and men.

Prayga Pathak, Raman Kalia, Bhavneet Bharathi.,(2012) conducted an experimental study on effect of needle gauge on perception of pain intensity among 320 adults receiving Hepatitis vaccination in India by using numerical pain scale.

The study revealed that there is a significant difference in the response to pain was observed among adults in the two groups. The study concluded that 23G needle causes less pain as compared to 25G needle.

Francis Sachnyun Nahm, Pyung Bok Lee, Soo Young Park ,Young Chul Kim, Sang Chullee, Hwa Young Shin, Chul Joong Lee.,(2012) conducted a cross sectional study on pain from intramuscular vaccine injection among 160 adults Korea by using a 100 mm visual analogue scale. The study revealed that there were no correlation between VAS and age, body mass index, or maximum pain score from previous painful experience, a history of child birth in female or religion. The study concluded that the gender appears to be the only major factor that influences the pain of intramuscular vaccine injection. Pain reducing methods will be needed when performing injection procedure particularly in women.

KusumadeviMS., Dayananda G., Shivakumar Veeraiah., Elizabeth J., Kumudavathy., (2011) conducted a epidemiological and survey research on pain associated with intramuscular injection among 300 subjects (140 men and 160 women) in Victoria hospital, Karnataka by using visual analogue scale. The study revealed that moderately significant higher pain score was associated with women as compared to men. The study concluded that women reporting an increased sensitivity to pain and this gender difference appear greatest in middle age.

Gideon Sartorius., Caroly Fennell., Sasa Spasevska., Leo Turner., Ann.J.Conway., David.J.Handelsman., (2011) conducted a case study on factors influencing time course of pain after depot oil intramuscular injection of testosterone

undecanoate among 125 men in Australia by using a colored visual linear analogue scale. The study revealed that the pain was more severe in men who had an earlier painful injection, but less severe in older and more obese men. The study concluded that deep intramuscular gluteal injection of depot TU in 4 ml castor oil is well tolerated and post injection pain is influenced by earlier painful injection experience, as well as age and obesity.

Malin Eranberg., Thomas Lundeberg., Sigvard Koop.,(2011) conducted an experimental study on pain and hyperalgesia induced by intramuscular injection of serotonin in patients with fibromyalgia and healthy individuals among 24 females in Sweden by using visual analogue scale. The study revealed that serotonin level tends to be lower in the fibromyalgia group that in the healthy individuals and the difference were not statistically significant. The study concluded that serotonin injected to the masseter muscle of healthy female subjects elicits pain and hyperalgesia, while no such response occurs in patients with fibromyalgia.

Faith Esad Topal., Birdal Yildirm(2011) conducted an experimental study on the assessment of distance of intramuscular injection location from some landmarks in 60 students of Mugal school of health science in Turkey by using structured questionnaire. The study revealed that the distance of intramuscular injection location in males is greater than the females from the upper point. The study concluded that intramuscular injection site is limited and it will be norm for patients who have a normal body mass index.

Farhadi Abolfazl., Esmaeilzadeh Mahdi., Farhadi Sadegh.,(2011) conducted an experimental study on effect of topical tetracaine gel 4% on intensity of pain due to intramuscular injection of hepatitis B vaccine among 40 adults in India by using VAS scale. The study revealed that tetracaine could not significantly decrease the severity of pain due to hepatitis B vaccine intramuscular injection in case group as compared with placebo group. The study concluded that the topical tetracaine application could not play an important role in decreasing of pain during hepatitis B vaccine intramuscular injection.

Tray K Rubin., Simon C Gandevis., Luke.A.Henderson(2011) conducted an experimental study on effect of intramuscular anesthesia on the expression of primary and referred pain induced by intramuscular injection of hypertonic saline among 30 subjects in England by using visual analogue scale. The study revealed that in the all subjects .the area and intensity of primary pain rapidly disappeared within 7-5 minutes of intramuscular injection, in whom the referred pain continue in the absence of primary pain. The study concluded that the maintenance of referred muscle pain usually depends on ongoing noxious inputs from the site of primary muscle pain.

Gahahiri Ata Allaha., Fereidoni Farzaneb., Fatemeh., Ghasemi., Mojdeh., (2011) conducted a comparative study on effect of intramuscular pethedine injection against intravenous patient control analgesia after elective cesarean section among 88 candidate in Sephan shahr hospital of Isfahan by using visual analogue scale. The study revealed that mean of pain was less in 2-4 hours after surgery in pethedine intramuscular injection group than PCA. The study concluded that PCA is a

new method for pain relief but it is doesn't have efficacy such as intramuscular pethedine and patient satisfaction was less in PCA.

Studies related to effectiveness of Heifer skin tap technique on pain associated with intramuscular injection.

Roopa Z, Vassilopoulos A, Sotriopoulou P, Makrinika E, Noula M, Faros E, Marvzki C., (2013) conducted an experimental study on effect of Heifer skin tap technique on pain perception after intramuscular injection among 60 adults patients in India by using visual analogue scale and verbal rating scale. The study revealed that the pain perception of patient in terms of pain scores without Heifer skin tap was found to be significantly higher than pain perception of patients with skin tap. Thus Heifer skin tap can be used as an intervention to reduce pain after administration of intramuscular injection.

Christina D, Hinmikaiye, Eunice I.Bamishaiye., (2012) conducted an experimental study on Heifer skin tap and its effect on procedural pain among 40 adults in USA by using numerical pain scale. The study revealed that the pain perception of patients in terms of pain score without Heifer skin tap was found to be significantly higher than pain perception of patients with skin tap. The study concluded that the Heifer skin tap technique was shown to be significant in reducing procedural pain.

Joanne W. Y. Chung, Winnine M. Y, Thomas K. S. Wong.,(2012) conducted an experimental study on the use of Heifer skin tap technique to reduce pain in intramuscular injection among 74 subjects participating in an immunization

vaccination campaign Japan by using pain intensity verbal rating scale. The study revealed that Heifer skin tap technique can be used as an intervention before administration of intramuscular injection to reduce pain.

Chung J W, Ngwm, Wong TK.,(2012) conducted an experimental study on Heifer skin tap reduce perceived pain at the intramuscular injection site among 104 university students in China by using 10 point intensity verbal rating scale. The study revealed that the mean pain score was lower among students who received Heifer skin tap prior to injection and women scored higher perceived pain intensity for both the intervention and control group. The study concluded that Heifer skin tap at the intra muscular injection site reduced the amount of perceived pain during intra-muscular injection.

Jose Rose Mary, Sulochana, Shetty Sheela.,(2012) conducted an experimental study on effectiveness of skin tap technique in reducing pain response associated with intramuscular injection among 60 adults in Bangalore by using 0-10 numerical pain scale. The study revealed that there is an association between the pain scores and selected demographic variables like gender and body mass index. The study concluded that skin tap technique is effective in reducing pain response associated with intramuscular injection.

Farhadi A, Esmailzadeh M.,(2011) conducted an experimental study on effectiveness of Heifer skin tap technique on intensity of pain due to penicillin benzathin in intramuscular injection among 60 patients in Iran by using questionnaire and visual analogue scale. The study revealed that Heifer skin tap significantly

decreased the severity of pain due to penicillin benzathin injection in case group as compared with control group. The study concluded that Heifer skin tap could play an important role in decreasing pain during penicillin benzathin intramuscular injection.

Serena.,(2011) conducted an experimental study on rhythmic skin tapping to reduce procedural pain during intramuscular injection among 60 patients in orthopedic ward or in the trauma ward at St John's medical college hospital ,Bangalore by using 0-10 numerical pain scale. The study revealed that the overall mean pain intensity by using Heifer skin tap technique was much lower than the pain level by the usual technique. And the mean difference in the pulse rate after the intramuscular injection was found to be with the skin tap technique than the usual technique. The study concluded that Heifer skin tap technique is an effective method to reduce procedural pain.

Barry J. Sessle, Peter Svensson.,(2010) conducted an experimental study on the intensity of pain experienced by respondents given intramuscular injection with / without skin tapping technique among 60 respondents with rheumatic heart disease in selected hospital at Mumbai by using 0-10 numerical pain scale. The study revealed that there is a significant difference in the pain perception by the respondents between the two techniques of giving intramuscular injection and there is a significant relation between the selected variables like body mass index, gender, age, and etc. The study concluded that there is a significant relationship between the skin tapping and the pain perception.

Hedayatollah Leelah Agan, Alimohammadi, Zahara Ghasempour.,(2010) conducted an experimental study on effectiveness of Heifer skin tap technique on pain associated with intramuscular injection among 60 adults in Iran by using structured questionnaire. The study revealed that a significant difference between mean score of pain severity before and after skin tap in intervention group only. The study concluded that the Heifer skin tap technique is effective in reducing pain associated with intramuscular injection.

CONCEPTUAL FRAMEWORK

WIEDENBACH'S HELPING ART CLINICAL NURSING THEORY (1964)

A conceptual framework is the precursor of the theory, conceptual framework play several interrelated roles in progress of sciences. Their overall purpose is to make scientific studies meaningful and generalizable.

Polit and Hungler (1995) states that a conceptual framework is the interrelated concepts or abstractions that are assembled together in the relevance to the common theme. It is a device that helps to stimulate research and extension of knowledge by providing both directions and impetus.

The present study aims to evaluate the effectiveness of Heifer skin tap technique on pain associated with intramuscular injection among hospitalized adults. The conceptual framework of the study was based on Widenbach's Helping Art Clinical Nursing Theory (1964).

Wiedenbach (1964) proposed the theory as a prescriptive theory of nursing. Prescriptive theory directs action towards an explicit goal.

The theory includes 3 factors: central purpose, prescription and realities. A nurse develops a prescription based on a central purpose and implements it according to the realities of the situation.

Central Purpose

Central purpose in the theory refers to what the nurse want to accomplish. It is the overall goal towards which a nurse strives; it transcends the immediate intent of the assignment or task by specifically directing activities towards the patient's benefits.

In this study, the central purpose refers to reduce the level of pain associated with intramuscular injection among hospitalized adults.

Prescription

Prescription refers to the plan of care for a patient. It specifies the nature of the action that will fulfill the nurse's central purpose and rationale for the action.

In this study, Heifer skin tap technique is administered 3 times before inserting the needle and 3 times after removing the needle as an intervention to reduce the level of pain associated with intramuscular injection among hospitalized adults.

Realities

Realities refer to the physiological, physical, emotional and spiritual factors that come into play in a situation involving nursing actions.

In this study, age and gender, history of allergic reaction due to intramuscular injection of the patient were physiological factors, habit of practicing muscle exercise, previously and previous exposure to intramuscular injection were physical factors and religion was a spiritual factor.

According to Wiedenbach nursing practice consists:

- Identifying the need for help.
- Ministering the needed help.
- Validating whether the need was met.
- Co-ordination.

Identifying the Need for Help

It involves viewing the patient as an individual with unique experience and understanding the patient's perception of condition. Determining a patient's need for help based on the existence of a need whether the patient realize the need which prevents the patient from meeting the need whether the patient could meet the need alone.

In this study, it involves identification of the need for reduction in level of pain associated with intramuscular injection among hospitalized adult, by using standardized MCAFFERY 0-10 numerical pain scale.

Ministering the Needed Help

It refers to the provision of needed help. It requires an identified need and a patient who wants help.

In this study, Heifer skin tap technique is administered 3 times before inserting the needle and 3 times after removing the needle as an intervention to reduce the level of pain associated with intramuscular injection among hospitalized adults

Validating whether the Need was met

It refers to a collection of evidence that shows whether a patient's needs have been met and his functional ability has been restored due to direct result of the nurse's actions. It based on patient oriented evidence.

In this study, it evaluates the effectiveness of Heifer skin tap technique by using Standardized MCAFFERY 0-10 Numerical Pain Scale. A positive outcome represents satisfaction of hospitalized adults with decreased pain perception by Heifer skin tap technique and the intervention is reinforced and the negative outcome represents dissatisfaction of hospitalized adults with increased pain perception.

Co-ordination

Co-ordination is by reporting, consulting and conferring to the client.

In this study it refers to reporting, consulting and conferring with the physician, nurses, patient and family members regarding the effectiveness of Heifer skin tap technique.

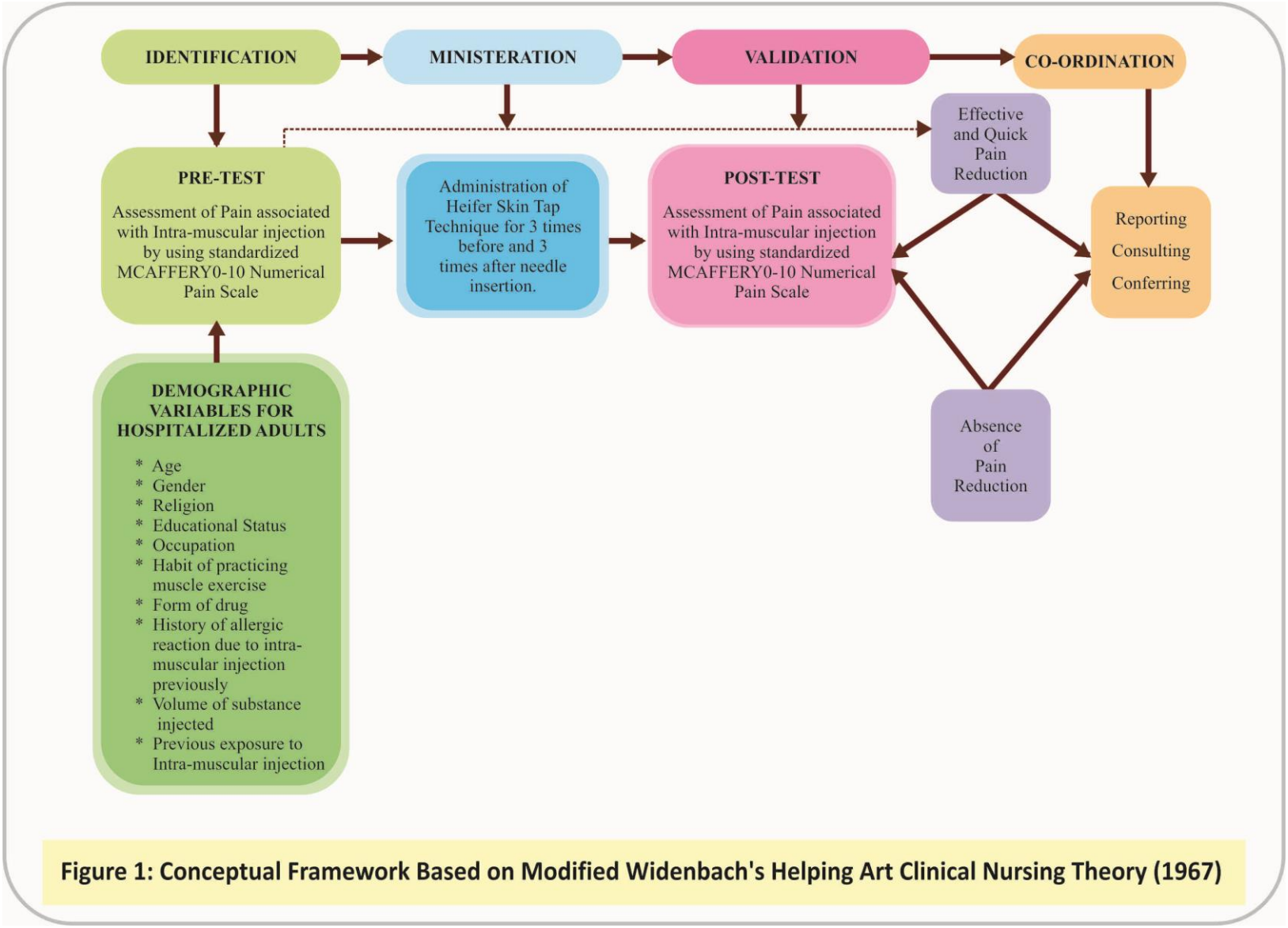


Figure 1: Conceptual Framework Based on Modified Widenbach's Helping Art Clinical Nursing Theory (1967)

CHAPTER III

RESEARCH METHODOLOGY

Methodology deals with the research approach, research design, setting of the study, population, criteria for selection of sample, sample size, sampling technique, description of tool, scoring procedure, pilot study, data collection procedure, plan for data analysis and protection of human rights.

Research Approach

Polit and Hungler, (2004) defined the research approach as “a general set of orderly discipline procedure used to acquire information”.

The research approach used for this study was quantitative approach to evaluate the effectiveness of Heifer skin tap technique on pain associated with intramuscular injection among hospitalized adults

Research Design

Poilt and Hungler, (2004) defined research design as “overall plan for addressing a research questions, including specification for enhancing the study integrity.”

A pre experimental one group pre test post test design was chosen for the study.

The diagrammatic representation of the research design given as follows:

Group	Pre- test D_1	Intervention D_2	Post- test D_2
Experimental group(E)	O_1	X	O_2

Key

O_1 : Pre-test assessment of pain associated with intramuscular injection – on day 1.

X : Heifer skin tap technique for 3times before the insertion of needle and 3 times after removing the needle - on day 2 .

O_2 : Post-test assessment of pain associated with intramuscular injection – on day 2.

$O_2 - O_1$: Effectiveness of Heifer skin tap on level of pain associated with intramuscular injection.

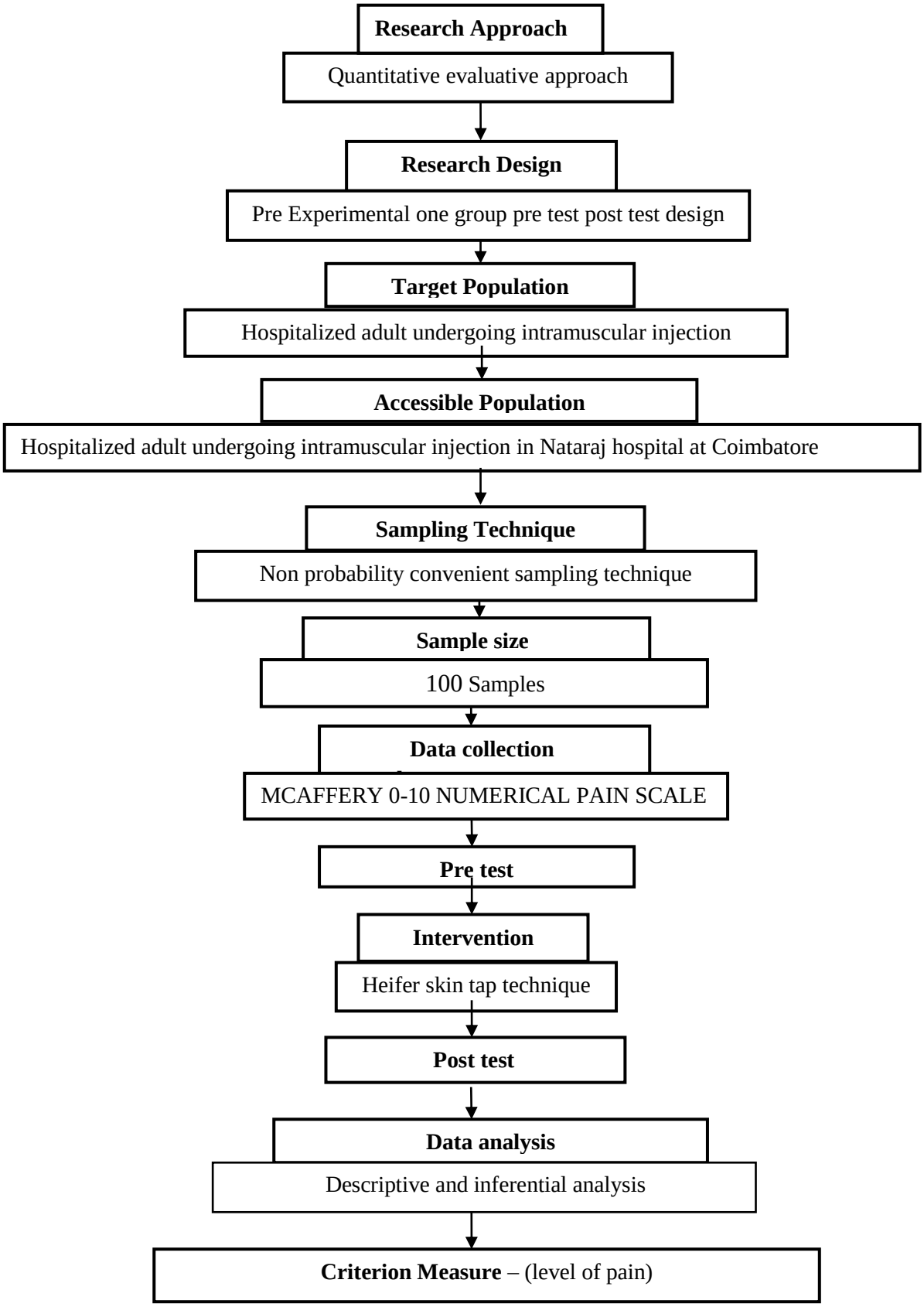


Figure 2 : The Schematic Representation of Research Methodology

Variables

A variable is an attribute of a person or object that varies, that is, takes on different values. Variables are measurable characteristics of a concept and consist of logical group of attributes.

Dependent Variable

Dependent variable is that which is hypothesized to depend on (or) been caused by another variable. In this study the dependent variable is the level of pain associated with intramuscular injection among hospitalized adults.

Independent Variable

Independent variable is manipulated and it intends to cause a change in the dependent variables. In this study the independent variable is Heifer skin tap technique.

Setting of the Study

Polit and Hungler (2004) stated that " the physical location and conditions in which data collection has taken place in a study is the setting of the study".

The study was conducted in Nataraj hospital at Coimbatore. It was situated at a distance of 4 Km from Annai Meenakshi College of Nursing. Nataraj hospital is a100 bedded hospital with different departments like medical surgical, gynecology, orthopedics, neurology, gastrology, and urology. The hospital has separate operation

theater and a well equipped laboratory. In the outpatient and inpatient department, 800 and 300 cases respectively registered monthly.

Population

According to Polit and Hungler, (2005) “A population is the entire aggregation of cases in which a researcher is interested”.

The target population is the aggregation of cases about which the researcher would like to make generalization. An accessible population is the section of the target population to which the researcher has reasonable access. In this study the target population was hospitalized adult undergoing intramuscular injection. The accessible population was hospitalized adult undergoing intramuscular injection in Nataraj Hospital at Coimbatore.

Sample

According to Basavanthappa B.T, (2005) “sampling is a process of selecting representative units of a population for study in a research. It is the process of selecting a subset of a population in order to obtain information regarding a phenomenon in a way that represents the entire population”.

The sample size for the study was 100. The subjects were selected in Nataraj hospital at Coimbatore.

Sampling Technique

According to Burns and Groove, (2005) “sampling technique is the process of selecting a portion of the population to represent the entire population”.

The sample of the study was selected by adopting non probability convenient sampling technique. The total sample size was 100 and they were selected based on inclusion criteria.

Criteria for Sample Selection

Inclusion Criteria

The study includes hospitalized adults:

1. Both male and female between the age group of 20 to 45 years.
2. Who are having one dose of intramuscular injection in a day.
3. Who are willing to participate in the study.
4. Both medical and surgical patients.
5. Person who are getting 3 ML of intramuscular injection.

Exclusion criteria:

The study excludes the hospitalized adults:

1. Who are critically ill.
2. Who are having neurological disorders such as seizure, cerebrovascular Accident
3. Who are deaf and dumb.
4. Acute diseased patients

Development of the Tool

Treece and Treece (1986) emphasized that the instrument selected in research should as far as possible be the vehicle that could best obtain data for drawing conclusion pertinent to the study.

The research tool was developed in English after an extensive review of literature and expert opinion. It was translated into Tamil by language expert. The standardized MCAFFERY 0-10 numerical pain scale was used as the instrument to measure the pain.

Description of tool

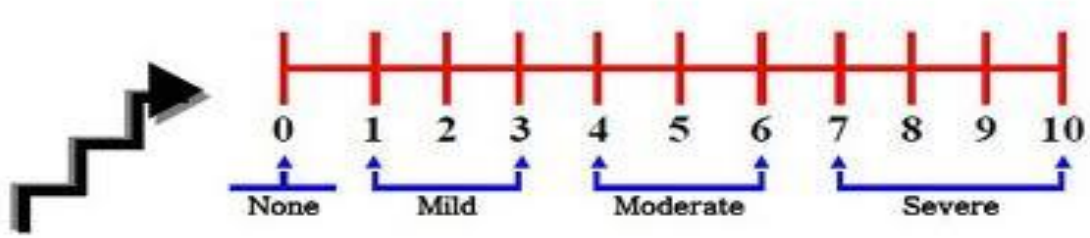
Part A

It consisted of demographic variables of hospitalized adults that includes age, gender, religion, educational status, occupation, habit of practicing muscle exercise, form of drug, history of allergic reaction due to intramuscular injection previously, volume of substance injected, Previous exposure to intramuscular injection.

Part B

It consisted of standardized MCAFFERY 0-10 numerical pain scale.

It is a standardized numerical scale used to assess the level of pain in adults. It consists of 0 to 10 scores and four categories ‘0’ belongs to none. ‘1,2,3’ belongs to mild category. ‘4, 5, 6’ belongs to moderate category. ‘7. 8, 9, 10’ belongs to severe category. The samples given the score according to their pain perception before and after the intervention .



Scoring Procedure

Regarding pain score, the maximum score is 10 and minimum score is 0. The score is given depending upon the 'X' placed by the sample in the pain scale. The score was divided into the following categories.

0	:	No pain
1-3	:	Mild pain
4-6	:	Moderate pain
7-10	:	Severe pain

Intervention

Samples were explained regarding the sequence of procedure and the required articles were assembled at the bedside. Client was provided with side lying position and the injection site was relaxed by tapping the skin for 16 times with palmer aspect of the hand for 5 seconds. The injection site was prepared and cleaned with spirit swab using surgical asepsis and made a "V" with thumb and other four fingers of non dominant hand and then uncapped the syringe. Then tapped the injection site for 3 times with dominant hand and inserting the needle, and checked if

any blood is withdrawn, if not injected the medication slowly by pushing the piston. Then the needle is removed quickly and the injection site was tapped for 3 times. The pain is assessed by using standardized MCAFFERY 0-10 numerical pain scale. Patient was positioned comfortable.

Validity

According to Burns and Groove., (2005) " the validity of an instrument is the determination of the extent to which the instrument reflect the abstract construct that is being examined".

Five experts in nursing and two experts in medicine evaluated the content validity of the instrument. Nursing experts were medical surgical nursing and medical experts were of cardio thoracic and diabetology department.

Reliability

According to De Vos., (1998) reliability refers to "the accuracy and consistency of a measuring instrument". An instrument can be considered reliable if it yields similar results on separate occasions.

In this study standardized MCAFFERY 0-10 numerical pain scale was used to assess level of pain associated with intramuscular injection, is a reliable tool.

Pilot Study

Polit and Beck., (2004) denote that "pilot study is a small-scale version or trial run done in preparation of major study".

The researcher conducted pilot study among 10 patients in Sree Meenakshi Hospital, Kuniyamuture, Coimbatore after obtaining the written permission. The purpose was to find out the feasibility of the study. It was found to be feasible.

Data Collection Procedure

The data collection procedure was done for a stipulated period of 4 weeks in Nataraj Hospital at Coimbatore. Permission to conduct the study was obtained from the chairman of the hospital. The samples were informed by the researcher about the nature and the purpose of the study. The informed written consent was obtained as per rule on the 1st day. On the same day (Day 1) the pre assessment of pain associated with intramuscular injection was measured by using standardized MCAFFERY (0-10) numerical pain scale in the morning without doing Heifer skin tap technique. On day 2 Heifer skin tap technique was administered to the samples followed by post test assessment of pain associated with intramuscular injection by using standardized MCAFFERY 0-10numerical pain scale.

Plan for Data Analysis

The demographic variables were analyzed by using descriptive measures (frequency and percentage) .The pain was analyzed by using descriptive statistics (mean , standard deviation). The effect of Heifer skin tap technique on pain associated with intramuscular injection was analyzed by using paired' test. Association between pain associated with intramuscular injection and the selected demographic variables were analyzed by using chi square test.

Protection on Human Rights

The study was conducted after the approval of ethical committee in Nataraj hospital and research committee of the college of nursing. The nature and purpose of the study was explained to the care personnel involved. The informed written consent was obtained from the study participant. The anonymity of the sample was maintained throughout the study.

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of the collected data from 100 hospitalized adults to assess the effectiveness of Heifer skin tap technique on pain associated with intramuscular injection. The purpose of analysis was to reduce the data to a intangible and interpretable form, so that the relation of the research problem can be studied and tested.

Polit and Beck (2003) has noted data analysis as "the systematic organization, synthesized research data and testing of research hypothesis using those data"

The analysis and interpretation of data of the study are based on data collected through standardized MACAFFERY 0-10 numerical pain scale among 100 hospitalized adults. The result were computed by using descriptive (Mean, Frequency, Percentage Distribution, and Standard Deviation) and inferential statistics (paired 't' test and chi square).

The study findings are presented in sections as follows:

Section I: Data on demographic variables of hospitalized adults.

Section II: Data on level of pain associated with intramuscular injection among hospitalized adults.

Section III: Data on effectiveness of Heifer skin tap technique on pain associated with intramuscular injection among hospitalized adults.

Section IV: Data on association between pain associated with intramuscular Injection among hospitalized adults with their selected demographic variables.

SECTION I : DATA ON DEMOGRAPHIC VARIABLES OF HOSPITALIZED ADULTS

Table: 1

Frequency and Percentage Distribution of Demographic Variables among Hospitalized adults.

N=100

S.No	Demographic Variables	Frequency (f)	Percentage (%)
1	Age (in years)		
	a. 20-29 years	28	28
	b. 30-39 years	51	51
	c. 40-45 years	21	21
2	Gender		
	a. Male	49	49
	b. Female	51	51
3	Religion		
	a. Hindu	84	84
	b. Muslim	16	16
	c. Christian	0	0
	d. others	0	0
4	Educational status		
	a. Primary education	67	67
	b. Secondary education	30	30
	c. Higher secondary education	3	3
	d. Graduate and above	0	0

(Contd.,)

S. No.	Demographic variables	Frequency (f)	Percentage (%)
5	Occupation		
	a. Heavy worker	10	10
	b. Moderate worker	56	56
	c. Sedentary worker	34	34
6	Habit of practicing muscle exercise		
	a. Yes	5	5
	b. No	95	95
7	Form of drug		
	a. Suspension	5	5
	b. Aqueous	95	95
8	History of any allergic reaction due to intra muscular injection previously		
	a . Yes	0	0
	b . No	100	100
9	Volume of substance injected		
	a . <2ml	91	91
	b . >2ml	9	9
10	Previous exposure to intramuscular injection		
	a .Yes	100	100
	b . No	0	0

Table 1 reveals that regarding age, majority of the hospitalized adults 51 (51%) belong the age group of 30-39 years, 28 (28%) belongs 20-29 years, 21 (21%) belong to age 40-45 years.

Regarding gender 51 (51%) hospitalized adults were females and 49 (49%) were males.

Regarding religion 84(84%) of hospitalized adults belongs Hindu, 16(16%) belong to Muslim; none of them belong to Christian and other religion.

Regarding educational status 67(67%) of hospitalized adult had completed primary education, 30(30%) had completed secondary education, 3(3%) had completed higher secondary education; none of them belong to graduate and above.

Regarding occupation 56(56%) were moderate worker, 34(34%) were sedentary worker and 10(10%) were heavy worker.

Regarding habit of practicing muscle exercise, 95(95%) was not practicing any type of muscle exercise 5(5%) were practicing muscle exercise.

Regarding form of drug 5 (5%) of hospitalized adults were getting suspension form of injection, 95(95%) were getting aqueous form of injection.

Regarding history of allergic reaction due to intramuscular injection previously all, 100(100%) of hospitalized adults had no allergic reaction due to intramuscular injection.

Regarding volume of substance injected 91(91%) were getting < 2ml of medicine via intramuscularly, 9(9%) were getting >2ml of medicine via intramuscularly.

Regarding previous exposure to intramuscular injection all, 100(100%) of hospitalized adults were previously exposed to intramuscular injection.

It reveals that among hospitalized adult having pain associated with intramuscular injection majority of them belongs to the age group of 30-39 years, were females, Hindu, had primary education, were moderate workers, had no habit of practicing muscle exercise, get aqueous form of drug, no history of any allergic reaction due to intramuscular injection previously, <2ml volume of substance injected, had previous exposure to intramuscular injection.

SECTION II: DATA ON LEVEL OF PAIN ASSOCIATED WITH INTRAMUSCULAR INJECTION AMONG HOSPITALIZED ADULTS.

Table: 2.1

Frequency and Percentage Distribution on Pre-test Level of Pain associated with intramuscular Injection among Hospitalized Adults.

N=100

Sl. No.	Level of Pain	Frequency (f)	Percentage (%)
1	No pain	0	0
2	Mild pain	0	0
3	Moderate pain	63	63
4	Severe pain	37	37

The above table shows that among 100 hospitalized adults, 63 (63%) had moderate pain and 37(37%) had severe pain during pretest.

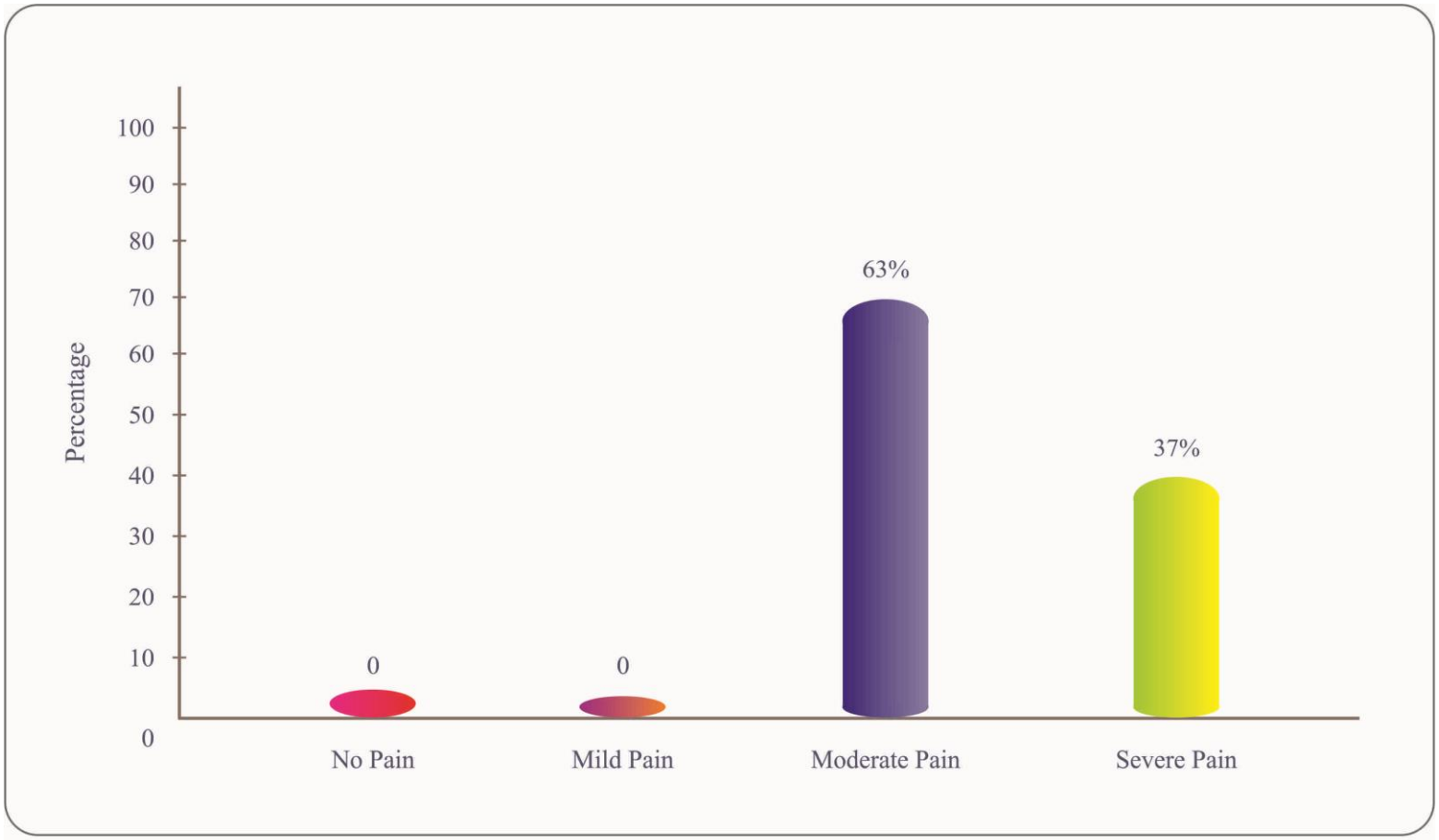


Fig 3 : Frequency and Percentage Distribution on Level of Pre-test Pain associated with intramuscular Injection among Hospitalized Adults.

Table: 2.2

Frequency and Percentage Distribution on Post-test Level of Pain associated with intramuscular Injection among Hospitalized Adults.

N=100

Sl. No.	Level of Depression	Frequency (f)	Percentage (%)
1	No pain	25	25
2	Mild pain	75	75
3	Moderate pain	0	0
4	Severe pain	0	0

The above table shows that among 100 hospitalized adults, 75(75%) experienced mild pain and 25(25%) experienced no pain during post test.

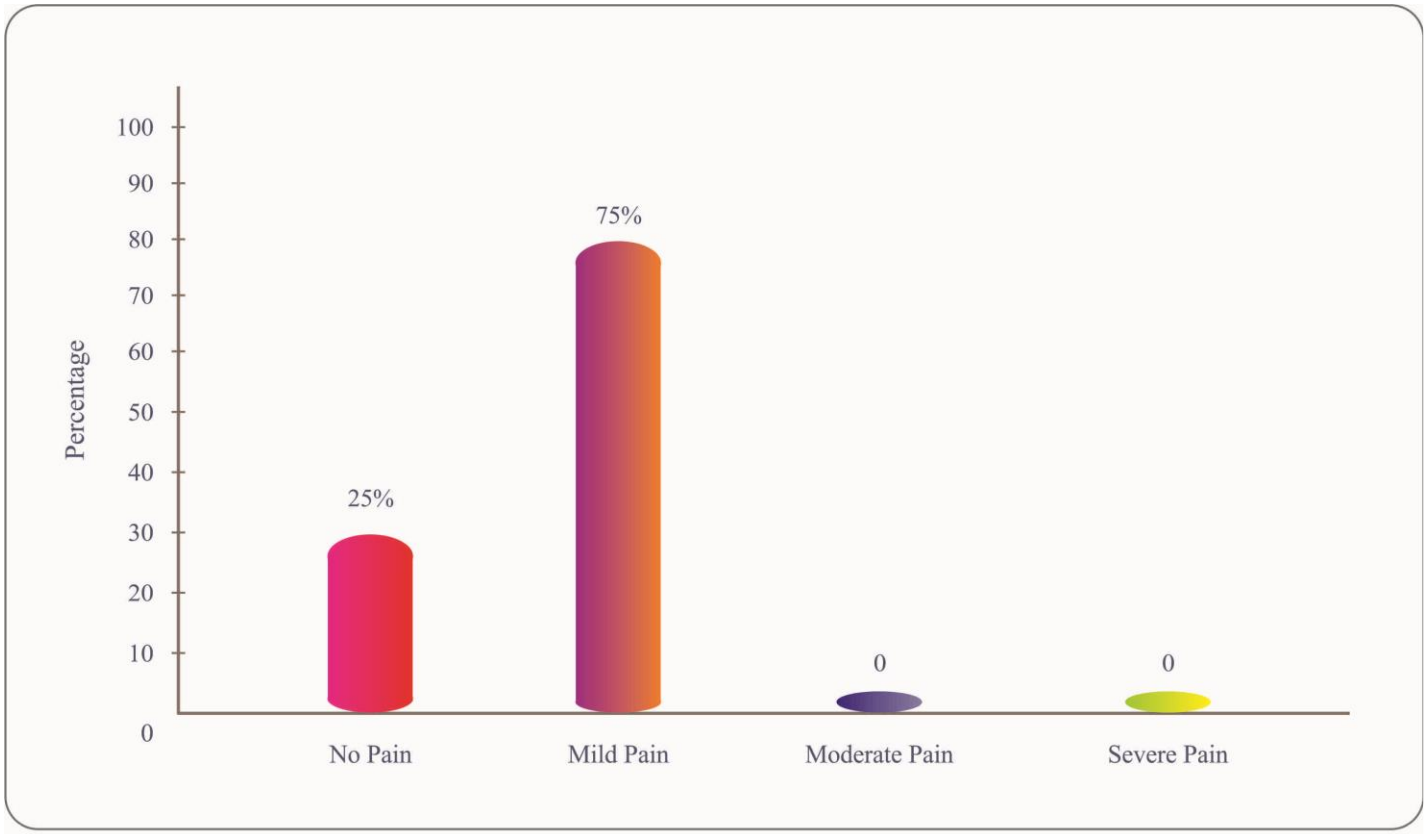


Fig 3 : Frequency and Percentage Distribution on Level of Post-test Pain associated with intramuscular Injection among Hospitalized Adults.

SECTION III : DATA ON EFFECTIVENESS OF HEIFER SKIN TAP TECHNIQUE ON PAIN ASSOCIATED WITH INTRAMUSCULAR INJECTION AMONG HOSPITALIZED ADULTS

Table: 3

Mean, Standard Deviation, Mean Difference and 't' Value on Pre test & Post test Level Of Pain Associated With Intramuscular Injection Among Hospitalized Adults.

N=100

S.NO.	Level of Pain	Mean	Standard Deviation	Mean Difference	't' Value
1.	Pre-test	6.13	1.08	4.8	54.02*
2.	Post-test	1.35	1.01		

* - Significant at $p<0.05$ level

Table 3 reveals that among hospitalized adults, the mean pre-test score was 6.13 with the standard deviation 1.08 and the mean post test score was 1.35 with the standard deviation 1.01 .The calculated mean difference was 4.8 and the obtained 't' value 54.02 was significant at $p<0.05$ level. Hence the stated hypothesis (H_1) was accepted. It was inferred that there is a significant difference between mean pretest and post test level of pain associated with intramuscular injection among hospitalized adults.

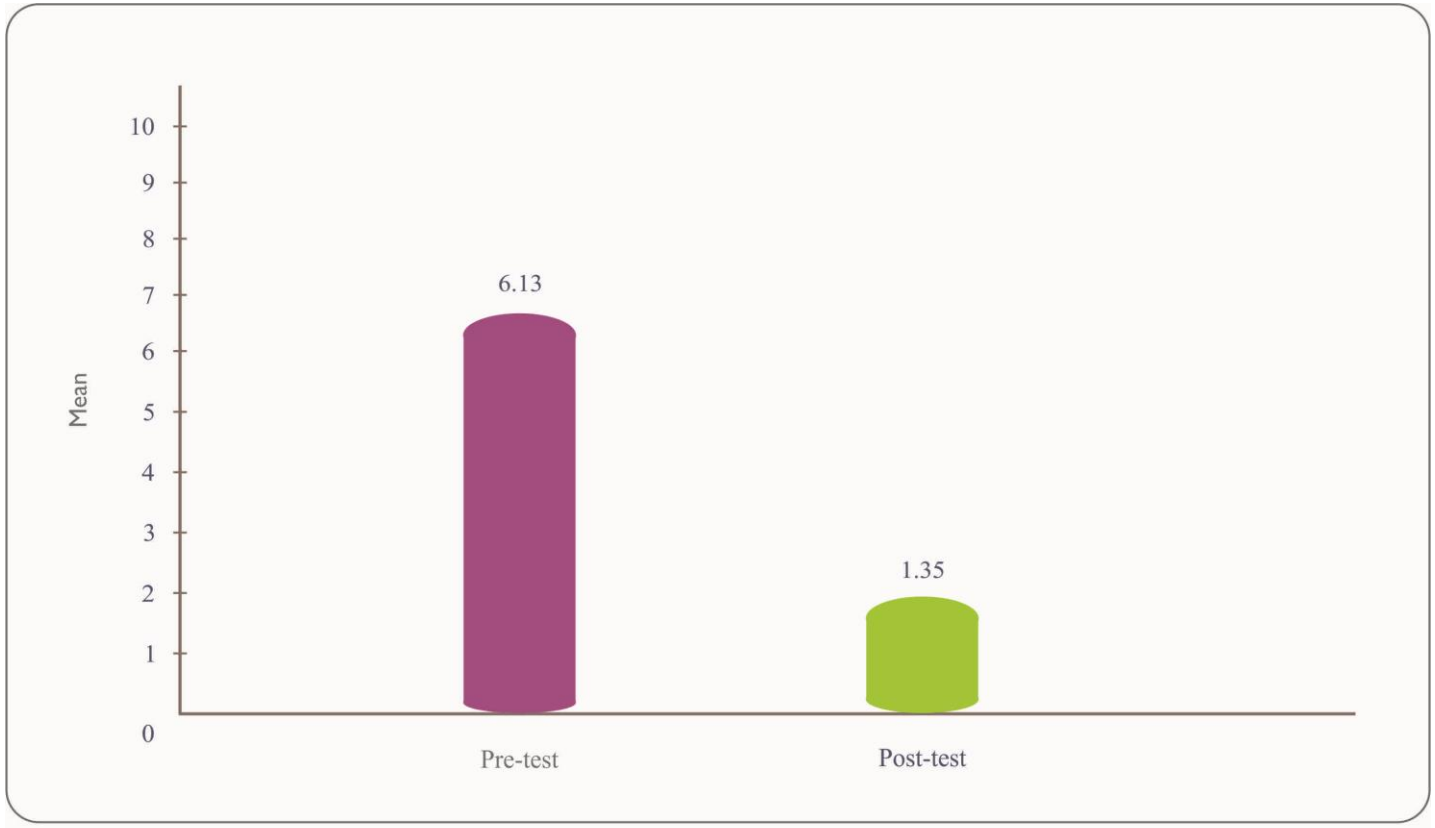


Fig 5 : Mean, Standard Deviation, Mean Difference and 't' Value on Pre test & Post test Level Of Pain Associated With Intramuscular Injection Among Hospitalized Adults.

SECTION 1V: DATA ON ASSOCIATION BETWEEN LEVEL OF PAIN ASSOCIATED WITH INTRAMUSCULAR INJECTION AMONG HOSPITALIZED ADULTS WITH THEIR SELECTED DEMOGRAPHIC VARIABLES

Table: 4

Frequency, Percentage and χ^2 Distribution on Level of Post Test Pain Associated with intramuscular injection among hospitalized adults With Their Selected Demographic Variables.

N=100

S. No.	Demographic Variables	Level of Pain				χ^2 Value
		No Pain		Mild Pain		
		f	%	f	%	
1.	Age (in years)					
	a. 20-29	12	12	16	16	11.85*
	b. 30-39	13	13	38	38	df=2
	c. 40-45	0	0	21	21	
2.	Gender					
	a. Male	20	20	29	29	12.81*
	b. Female	5	5	46	46	df=1
3.	Religion					
	a. Hindu	20	20	64	64	0.39^{NS}
	b. Muslim	5	5	11	11	df=1
	c. Christian	0	0	0	0	
	d. others	0	0	0	0	

^{NS} – Non Significant, * significant (Contd.,)

S. No.	Demographic Variables	Level of Pain				χ^2 Value
		No Pain		Mild Pain		
		f	%	f	%	
4.	Educational status					
	a. Primary education	12	12	55	55	8.07^{*}
	b. Secondary education	13	13	17	17	df=2
	c. Higher secondary education	0	0	3	3	
	d. Graduate &above	0	0	0	0	
5	Occupation					
	a. Heavy worker	5	5	5	5	5.34*
	b. Moderate worker	15	15	41	41	df=2
	c. Sedentary worker	5	5	29	29	
6	Habit of practicing muscle exercise					
	a. Yes	2	2	3	3	0.63^{NS}
	b. No	23	23	72	72	df=1
7	Form of drug					
	a. Suspension	2	2	3	3	0.36^{NS}
	b. Aqueous	23	23	72	72	df=1
8	History of allergic reaction					
	a. Yes	0	0	0	0	0^{NS}
	b. No	25	25	75	75	df=2
9	Volume of substance injected					
	a. <2ml	3	3	6	6	0.36^{NS}
	b. >2ml	22	22	69	69	df=1
10	Previous exposure to IM injection					
	a. Yes	25	25	75	75	0^{NS}
	b. No	0	0	0	0	df=2

Table 4 envisages the substantive summary of chi square analysis which was used to bring out the relationship between the levels of pain associated with intramuscular injection among hospitalized adult with their selected demographic variables.

With regard to age, among 20-29 years 12(12%) had no pain 16(16%) had mild pain. Among 30-39 years, 13 (13%) had no pain 38(38%) had no pain. Among 40-45 years none of them had no pain, 21 (21%) had mild pain. The obtained chi square value of 11.85 was significant at $p < 0.05$ level thus stated hypothesis is supported. So it is inferred that there is a significant association between the age and level of pain associated with intramuscular injection among hospitalized adults.

With regard to gender, among males 20(20%) had no pain, 29(29%) had mild pain .Among females 5 (5%) had no pain, 46 (46%) had mild pain. The obtained chi square value of 12.81was significant and thus the stated research hypothesis is supported. So it is inferred that there is a significant association between gender and level of pain associated with intramuscular injection among hospitalized adults.

With regard to religion, among Hindu 20(20%) had no pain, 64(64%) had mild pain. Among Muslim 5(5%) had no pain, 11(11%) had mid pain. The obtained chi square value of 0.39 was not significant and thus the stated research hypothesis is not supported. So it is inferred that there is no significant association between religion and level of pain associated with intramuscular injection among hospitalized adults.

With regard to educational status, among primary education 12 (12%) had no pain, 55(55%) had no pain. Among secondary education 13 (13%) had no pain, 17 (17%) had mild pain. Among higher secondary education none of them had no pain and 3(3%) had mild pain. The obtained chi square value 8.07 was significant at $p< 0.05$ level and thus the stated research hypothesis is supported. So it is inferred that there is a significant association between educational status and level of pain associated with intramuscular injection among hospitalized adults.

With regard to occupation, among heavy worker 5(5%) had no pain, 5(5%) had mild pain. Among moderate worker 15(15%) had no pain, 41 (41%) had mild pain. Among sedentary worker 5(5%) had no pain and 29 (29%) had mild pain. The obtained chi square value5.34 was significant at $p< 0.05$ level and thus the stated research hypothesis is supported. So it is inferred that there is a significant association between occupation and level of pain associated with intramuscular injection among hospitalized adults.

With regard to habit of practicing muscle exercise, among hospitalized adults who are practicing muscle exercise 2(2%) had no pain, 3(3%) had mild pain. Among hospitalized adults who are not practicing muscle exercise 23(23%) had no pain, 72 (72%) had mild pain. The obtained chi square value 0.63 was not significant and thus the stated research hypothesis is not supported. So it is inferred that there is no significant association between habit of practicing muscle exercise and level of pain associated with intramuscular injection among hospitalized adults.

With regard to form of drug, among suspension 2 (2%) had no pain, 3 (3%) had mild pain. Among aqueous23 (23%) had no pain, 72 (72%) had mild pain. The obtained chi square value 0.63 was not significant and thus the stated research hypothesis is not supported. So it is inferred that there is no significant association between form of drug and level of pain associated with intramuscular injection among hospitalized adults.

With regard to history of allergic reaction due to intramuscular injection previously, none of them have allergic reaction due to intramuscular injection previously are present. Among hospitalized adults who are not having allergic reaction previously 25(25%) had no pain, 75 (75%) had mild pain. The obtained chi square value 0 was not significant and thus the stated research hypothesis is not supported. So it is inferred that there is no significant association between history of allergic reaction due to intramuscular injection previously and level of pain associated with intramuscular injection among hospitalized adults.

With regard to volume of substance injected, among hospitalized adults volume of substance injected <2ml 3(3%) had no pain, 6(6%) had mild pain. Among hospitalized adults volume of substance injected >2ml 22(22%) had no pain, 69(69%) had mild pain. The obtained chi square value 0.36 was not significant and thus the stated research hypothesis is not supported. So it is inferred that there is no significant association between volume of substance injected and level of pain associated with intramuscular injection among hospitalized adults.

With regard to previous exposure to intramuscular injection, among hospitalized adults who are having previous exposure to intramuscular injection 25 (25%) had no pain , 75 (75%) had mild pain. Among hospitalized adults who are not having previous exposure to intramuscular injection none of them are present. The obtained chi square value 0 was not significant and thus the stated research hypothesis is not supported. So it is inferred that there is no significant association between previous exposure to intramuscular injection and level of pain associated with intramuscular injection among hospitalized adults.

It was inferred that, there is a significant association between level of pain associated with intramuscular injection among hospitalized adults with their selected demographic variable such as age, gender, educational status, occupation. There is no significant association between level of pain associated with intramuscular injection among hospitalized adults with their selected demographic variables such as religion, habit of practicing muscle exercise, form of drug, history of allergic reaction due to intramuscular injection previously, volume of substance injected, previous exposure to intramuscular injection.

CHAPTER V

DISCUSSION

The basic aim of this study was to evaluate the effectiveness of Heifer skin tap technique on pain associated with intramuscular injection among hospitalized adults in selected hospital at Coimbatore.

The study was conducted by using pre experimental one group pre test post test design with experimental group. Samples were selected from Natraj hospital for conducting the study. The sample size was 100.

The structured self administered questionnaire was used to assess the demographic variables among hospitalized adults with intramuscular injection. The standardized MCAFFERY 0-10 numerical pain scale was used to assess the level of pain associated with intramuscular injection. The responses were analyzed by using descriptive statistics (mean, frequency, percentage and standard deviation) and inferential statistics (paired 't' test and chi square test). Discussions on the findings were arranged based on objectives of the study.

The first objective was to assess the level of pain associated with intramuscular injection among hospitalized adults. The study revealed that during pre test 63 hospitalized adults had moderate pain (63%) and 37 hospitalized adults had severe pain (37%) and none of them had no pain and mild pain. During post test

25(25%) hospitalized adults had no pain and 75 (75%) hospitalized adults had mild pain.

The study finding were similar to the findings of Mitchell. T., (2011) conducted a cross sectional study on patients perception of pain with intramuscular injection among 100 patients in Australian hospital by using VAS. The study revealed that after the procedure 96% said that intramuscular injection is painful. The study concluded that there is high prevalence of perception of pain associated with intramuscular injection procedure.

The second objective of the study was to evaluate the effectiveness of Heifer skin tap technique on pain associated with intramuscular injection among hospitalized adults. The pre test mean was 6.13 and standard deviation 1.08. During post test the mean was 1.35 and the standard deviation 1.01. The mean difference was 4.8. The obtained t value 54.02 was significant at $p < 0.05$ level .Thus the stated hypothesis is accepted. The study revealed that Heifer skin tap technique is effective on pain associated with intramuscular injection among hospitalized adults.

The study findings were similar to the findings of Viki contle., (2012), conducted an experimental study on Heifer skin tap technique to reduce procedural pain among 228 adult patients in Japan , by adopting Visual Analogue scale .The study revealed that the overall mean pain intensity by using Heifer skin tap technique was much lower than the pain level by the usual technique. The study concluded that heifer skin tap technique is an effective method to reduce procedural pain.

The third objective of the study was to determine the association between pain associated with intra muscular injection among hospitalized adults with their selected demographic variables. The study revealed that there is significant association between the levels of pain associated intramuscular injection among hospitalized adults with their selected demographic variables such as age, gender, educational status, occupation. There is no significant association between level of pain associated with intramuscular injection among hospitalized adults with their selected demographic variables such religion, habit of practicing muscle exercise, form of drug, history of allergic reaction due to intramuscular injection previously, volume of substance injected, previous exposure to intramuscular injection.

The study findings were similar to the findings of Francis Sachnyun Nahm, Pyung Bok Lee, Soo Young Park ,Young Chul Kim, Sang Chullee, Hwa Young Shin, Chul Joong Lee.,(2012) conducted a cross sectional study on pain from intramuscular vaccine injection among 160 adults Korea by using a 100 mm visual analogue scale. The study revealed that there were no correlation between VAS and age, body mass index, or maximum pain score from previous painful experience, a history of child birth in female or religion. The study concluded that the gender appears to be the only major factor that influences the pain of intramuscular vaccine injection. Pain reducing methods will be needed when performing injection procedure particularly in women.

CHAPTER VI

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents a brief account of the present study. It deals with the summary, conclusion and recommendations of the study. Conclusions drawn from the findings and the implications of the results for nursing practice, nursing education, nursing research and nursing administration are stated.

Summary

The present study was conducted to evaluate the effectiveness of Heifer skin tap technique on pain associated with intramuscular injection among hospitalized adults in selected hospital at Coimbatore.

The objectives of the study were

- To assess the level of pain associated with intramuscular injection among hospitalized adults.
- To evaluate the effectiveness of Heifer skin tap technique on pain associated with intramuscular injection among hospitalized adults.
- To determine the association between post test level of pain associated with intra muscular injection among hospitalized adults with their selected demographic variables.

Pre experimental one group pre test post test design was used to evaluate the effectiveness of Heifer skin tap technique on pain associated with intramuscular injection among hospitalized adults. Standardized MCAFFERY 0-10 numerical pain scale was used to collect data to assess the level of pain associated with intramuscular injection among hospitalized adults.

Non probability convenient sampling technique was adopted to select the sample with inclusion criteria. Sample size was 100.

Tool consisted of

Part I : demographic variables (age, gender, religion, educational status, occupation habit of practicing muscle exercise, form of drug, history of allergic reaction due to intramuscular injection previously, volume of substance injected, previous exposure to intramuscular injection).

Part II: Standardized MCAFFERY 0-10 numerical pain scale to assess the level of pain associated with intramuscular injection among hospitalized adults.

Data collection was done by using self administered questionnaire.pre test was done on Day 1 without heifer skin tap technique in the morning. The second day morning post test assessment was done with heifer skin tap technique.

The collected data were analyzed by using by using both descriptive statistics (mean, frequency, percentage and standard deviation) and inferential statistics (paired 't' test and chi square test) and result were drawn.

Major Study Findings:

Major study findings include

- Regarding demographic variables of 100 hospitalized adults, majority of them belonged to the age group of 30-39 years, females, Hindu, had primary education, were moderate workers, had no habit of practicing muscle exercise, got aqueous form of drug, had no history of any allergic reaction due to intramuscular injection previously, had <2ml volume of substance injected, had previous exposure to intramuscular injection.
- Regarding effectiveness of Heifer skin tap technique on pain associated with intramuscular injection among hospitalized adults, the mean post –test score of pain associated with intramuscular injection was less than the mean pretest score. The obtained‘t’ value 54.02 was significant at $p<0.05$ level.
- Regarding association between the level of pain associated with intramuscular injection with their selected demographic variables, there was a significant association between age, gender, educational status, and occupation. There is no significant association between level of pain associated with their selected demographic variables such as religion, habit of practicing muscle exercise, form of drug, history of allergic reaction due to intramuscular injection previously, volume of substance injected, previous exposure to intramuscular injection.

Conclusion

The main conclusion drawn from the present study most of the hospitalized adults had moderate and severe pain in pre test and mild and no pain in post test. This

shows that the Heifer skin tap technique was effective on reducing pain associated with intramuscular injection among hospitalized adults.

Implications of the Study

According to Tolsma (1995) the section of the research report that focuses on nursing implication usually includes specific suggestions for nursing practice, nursing education, nursing research and nursing administration. Nursing implication for this study is enlisted below:

Nursing Practice

Clinical nurse can

- Can learn the techniques of heifer skin tap.
- Learn accurate assessment of pain with use of standardized MCAFFERY 0-10 numerical pain scale.
- Understand the importance of Heifer skin tap technique as an adjuvant to the conventional medicine.
- Use heifer skin tap technique as a complimentary therapy to reduce pain associated with intramuscular injection.
- Use this as a simple technique for reducing pain associated with intramuscular injection among hospitalized adults.
- Motivate the student nurses to use Heifer skin tap technique to reduce pain associated with intramuscular injection among hospitalized adults.
- Suggest this simple technique for preventing further complication associated with intramuscular injection.

Nursing Education

Nurse educators can motivate student to:

- Learn the effectiveness of heifer skin tap technique on reducing pain associated with intramuscular injection, as an independent nursing intervention.
- Learn the assessment of level of pain associated with intramuscular injection through the standardized MCAFFERY 0-10 numerical pain scale.
- Learn the technique and mechanism of Heifer skin tap technique on reducing pain associated with intramuscular injection.

Nursing Research

Nurse researcher can:

- Add to the research review about the importance of Heifer skin tap technique.
- Conduct further research in different setting using the above findings as a base line data.
- Expanding the scientific body of professional knowledge upon which further researches can be conducted.
- Help in practice aspect to expand the role of nurse.
- Disseminate the finding through the conference, seminars, publications, national and international journal and World Wide Web.

Nursing Administration

Nurse administrator can:

- Organize in service education programmes for the nurses on this technique.
- Develop a written protocol on method of Heifer skin tap technique implication.
- Make staff nurses to focus on the important aspect of Heifer skin tap technique to reduce pain associated with intramuscular injection.

Recommendations

- Similar kind of study can be conducted on a large group.
- A comparative study can be done between the effectiveness of various non pharmacological measures for pain associated with intramuscular injection. .
- The same study can be conducted in pediatrics and old age people.
- The same study can be conducted in different settings such as nursing homes, old age homes, and community centers.
- A descriptive study can be conducted on knowledge and attitude regarding heifer skin tap technique.
- The same study can be replicated in larger sample size.
- The study can be conducted with true experimental design.
- The study can be conducted with experimental and control group.

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APPENDIX – A

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Requisition for Content Validity

From

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Date : .....

Through
The Principal,
Annai Meenakshi College of Nursing,
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To

Respected Sir/Madam,

Sub: Requisition for expert opinion and suggestion f
validity of the tools – Reg.

I am a student of M.Sc., Nursing II year of Annai Meenakshi College of Nursing, Coimbatore, affiliated to The Tamil Nadu Dr. M.G.R. Medical University, Chennai. As a partial fulfillment of the M.Sc., Nursing programme, I am conducting "**A Study to Evaluate the Effectiveness of HEIFER Skin tap Technique on pain Associated with Intramuscular Injection among hospitalized adults in selected hospital at Coimbtore.** " I am hereby enclosing the following:

1. Statement and objectives of the study
2. Hypotheses
3. Methodology
4. Tool
5. Intervention
6. Content Validity certificate.

I Kindly request your guidance and valuable suggestions on the content submitted with this. It would be helpful for me to proceed my dissertation.

Thanking you,

Yours faithfully,

Place: Coimbatore
Date:

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APPENDIX – B

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Date : .....

Certificate of Validation

This is to certify that the tool submitted by **Mrs. Abhija .P.V.,,** M.Sc (N) II - Year student of Annai Meenakshi College of Nursing, Coimbatore, Tamil Nadu (Affiliated to The Tamil Nadu Dr. M.G.R. Medical University, Chennai) is validated by undersigned and can proceed with this tool and conduct the dissertation entitled "**A Study to Evaluate the Effectiveness of HEIFER Skin tap Technique on pain Associated Injection among hospitalized adults in selected hospital at Coimbtor**

Place: Coimbatore

Date:

Name and Designation

APPENDIX – C

Name List of Experts who validated the Tool

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APPENDIX D

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Ref. No.

Date : .....

August 4, 2014

From

Mrs. Abhija .P.V.,
II year M.Sc.,(N),
Annai Meenakshi College of Nursing,
Coimbatore – 21.

To

The Director,
Natraj Hospital Pvt. Ltd.,
Madukkarai.
Coimbatore.

Through Principal of Annai Meenakshi College of Nursing,

Respected Sir/Madam,

Sub: Conduct study – Permission – Request - Regarding

I am Mrs. Abhija P.V.,doing M.Sc., Nursing II year in Annai Meenakshi College of Nursing, Coimbatore. As a part of requirement given by The Tamilnadu Dr.M.G.R. Medical University, Chennai. I need to conduct " **A Study to Evaluate the Effectiveness of Heifer Skin tap Technique on pain associated with intramuscular Injection among hospitalized adults in Nataraj Hospital at Coimbatore.**" Hence I request you to kindly permit me to collect data during the period from 04 .08.2014 to 30.08.2014.

Thanking you,

Yours faithfully,

NATARAJ MEDICAL CARE CENTRE PVT.LTD,
BAZAAR STREET, MADUKKARAI
COIMBATORE - 641 105.

4/8/14
PRINCIPAL
Annai Meenakshi College of Nursing
COIMBATORE-641 021.

APPENDIX E

CONSENT FORM

Respected Sir / Madam,

I am Abhija P.V, I am doing my second year M.Sc., (N) in Annai Meenakshi College of Nursing. I am conducting a Research on "A study to evaluate the effectiveness of Heifer skin tap technique on pain associated intramuscular injection among hospitalized adults". I request your co-operation to complete my research. I assure you that you won't get any harm due to this intervention.

I Mr. / Mrs. …… was explained about the effectiveness of Heifer skin tap on pain associated intramuscular injection among hospitalized adults by Mrs. Abhija P.V. She explained me the benefits of this intervention. I agree with this intervention of Heifer skin tap technique and this study project whole heartedly.

Yours faithfully,

Date :

Time :

¾¦nr®¡if ?F

x¥òj± got«

k½¥¾¦FÇnahnu/

tz¡f«. br±É. m¾$h v¬w eh¬ m¬id Ûdh£¼ brÉÈa® f±YhÇÆ± brÉÈa® g£l nk¦go¥ò go¤J¡bfh©oU¡»nw¬. eh¬ C¼ nghL«bghGJ tÈ Fiw¡F« Kiwahd b|-g® njhÈ± j£L« Kiwia¥ g¦¿ Muh-¢¼ br-aî´ns¬. ,j¦fhf eh¬ j§fsJ KG x¤JiH¥ig nf£L¡ bfh´»nw¬. nkY« ,jdh± j§fS¡F vªj xU gh½¥ò« V¦glhJ v¬gij bjÇÉ¤J¡ bfh´»nw¬.

½U. / ½Uk½. .. .. v¬»w eh¬/ br±É. m¾$h brÉÈa® mt®fËlÄUªJ b|-g® njhÈ± j£L« Kiw jir C¼ nghL«bghGJ V¦gL« tÈia¡ Fiw¡F« v¬gij bjÇªJbfh©nl¬. vdnt eh¬ KG kdJl¬ ,ªj Muh-¢¼Æ± <Lgl r«k½¡»nw¬.

,l« : j§f´ c©ikí´s

eh´ :

APPENDIX G

Structured Questionnaire (English)

Demographic Variables

(Questionnaire to assess the demographic variables of Hospitalized adults)

Sample no :

Date:

1. Age in years
   a. 20-29years ( )
   b. 30-39years ( )
   c. 40-45 years ( )

2. Gender
   a. Male ( )
   b. Female ( )

3. Religion
   a. Hindu ( )
   b. Muslim ( )
   c. Christian ( )
   d. Others ( )

4. Educational status
   a. Primary education ( )
   b. Secondary education ( )
   c. Higher secondary education ( )
   d. Graduate and above ( )

5. Occupation
   a. Heavy worker ( )

b. Moderate worker ( )

c. Sedentary worker ( )

6. Habit of practicing muscle exercises

a. Yes ( )

b. No ( )

7. Form of drug

a. Suspension ( )

b. Aqueous ( )

8. History of allergic reaction due to intramuscular injection previously

a. Yes ( )

b. No ( )

If yes specify

9. Volume of substance injected

a. <2 ml ( )

b. >2 ml ( )

10. Previous exposure to intramuscular injection

a. Yes ( )

b. No ( )

gF½ ? I

jftyhs® g¦¿a Égu«

k½¥¾¦F¿a g§nf¦ghs®fns/

Ñ³¡f©lthW nf£f¥gL« nf´Éfis ftdkhf nf£L jFªj ÉilaË¡fî«

kh½Ç v©:

1. taJ (tUl¤½±)
   - m. 20 Kj± 29 tiu ( )
   - M. 30 Kj± 39 tiu ( )
   - ,. 40 Kj± 45 tiu ( )

2. ghÈd«
   - m. M© ( )
   - M. bg© ( )

3. kj«
   - m.,ªJ ( )
   - M.Kµä« ( )
   - ,. »¿µjt« ( )
   - <. k¦wit ( )

4. f±É¤ jF½
   - m. Mu«g Ãiy¡ f±É ( )
   - M. eLÃiy¡ f±É ( )
   - ,. nk±Ãiy¡ f±É ( )
   - <. g£ljhÇ ( )

5. ntiy Égu«
   - m. fodkhd bjhÊ± ( )
   - M. eL¤jukhd bjhÊ± ( )
   - ,. ,yFthd bjhÊ± ( )

6. jir r«gªjkhd cl¦gÆ¦¼ br-í« gH¡f«

   m. c©L ( )

   M. ,±iy ( )

7. kUª½¬ jÅ¤j¬ik

   m. Ú® ½©k fyit ( )

   M. Ú®k fyit ( )

8. jirÆ± C¼ nghL«bghGJ x²thik c©lh>

   m. M« ( )

   M.,±iy ( )

9. kUª½¬ msî

   m. < 2 ÄÈ ( )

   M. > 2 ÄÈ ( )

10. ,j¦F K¬ jirÆ± C¼ ngh£lJ©lh>

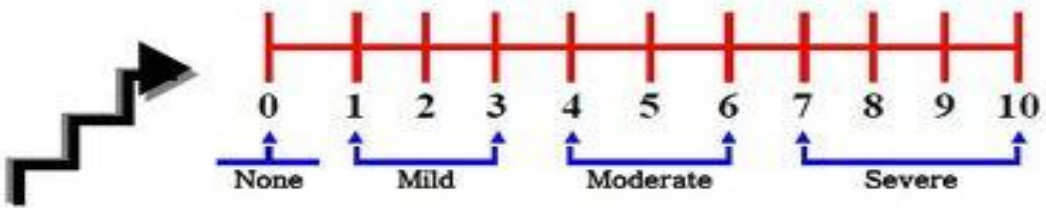
   m. c©L ( )

   M. ,±iy ( )

APPENDIX I

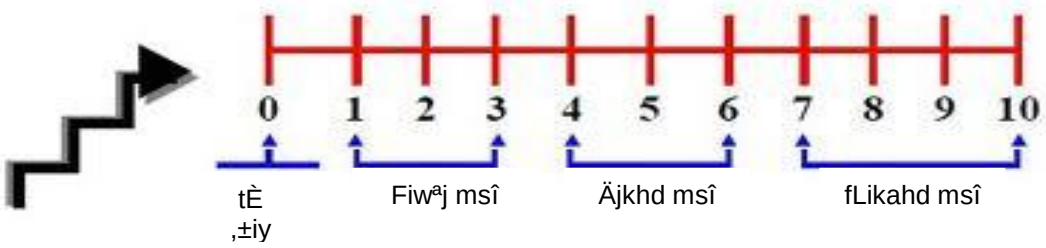
SECTION – B

STANDARDISED MCAFFERY 0-10 NUMERICAL PAIN SCALE



¾¡nr®¡if ? J

bk¡fgÇ 0?10 tÈ msit



APPENDIX K

SCORING KEY

Level of Pain	Score
No Pain	0
Mild Pain	1-3
Moderate Pain	4-6
Severe Pain	7-10

APPENDIX L

HEIFER SKIN TAP TECHNIQUE

Definition:

HEIFER skin tap technique is the administration of intramuscular injection by tapping to ventrogluteal site of buttock by using palmer aspect of the hand about three times and inserting the needle without the feeling of pain and removing the needle by tapping the area again three times

PURPOSE:

- To alleviate the Pain
- To improve superficial vasodilatation
- To bring about relaxation of muscle
- To reduce needle anxiety
- To give anesthetic effect

Mechanisms of HEIFER skin tap technique on reducing pain

The mechanism of Heifer skin tap technique is GATE CONTROL THEORY. In Heifer skin tap technique while doing tapping before intramuscular injection the nervous system will shut down the sensory gate and the pain sensation of the injection will not reach the brain. So the injection pain goes unnoticed.

According Ronald Melzack and Patrick Wall (1965) the nerve fibers with smaller diameter carry pain stimuli through the gate mechanism present in spinal cord. But, the nerve fibers with larger diameter, which carry other stimuli such as touch, pass through the same gate. The larger nerves inhibit the transmission of pain signals by smaller nerves through the gate.

When the pain sensation is produced in any part of the body, along with pain fibers, the other afferents particularly the touch fibers reaching the posterior column of spinal cord are activated. The posterior column fibers send collaterals to the cells of substantia gelatinosa in the posterior gray horn. Thus, some of the impulses ascending via dorsal column fibers pass through the collaterals and reach substantia gelatinosa. Here, touch impulses inhibit the release of substance P by the pain fibers ending on substantia gelatinosa, so the pain sensation is suppressed.

Indications of Heifer skin tap technique

- It reduces the procedural pain.
- It relaxes muscle.

ARTICLES

S.NO.	ARTICLES	PURPOSES
1	Clean tray containing Syringe and needles of appropriate size.	There should be minimum two needles; one to withdraw the medicine from the

		vial and other one to administer the injection.
2	Sterile cotton swabs and gauze pieces in sterile containers.	To clean the skin at the site of injection.
3	Methylated spirit in a container.	To clean the skin.
4	Kidney tray and paper bag.	To receive the waste.
5	Water for injection.	To dilute the powered medications.
6	Drug ordered.	
7	File to cut open the ampoules.	
8	Small covered tray (sterile)	To carry the prepared injections to the bedside.

PROCEDURE

S.NO.	STEPS	RATIONALE
1	Patients should be identified as per inclusion criteria.	To get the correct samples.
2	The details of the study and need	To win his/her confidence and

	for the study will be explained to the patient and obtain the written consent.	cooperation.
3	Check the clients' identification and condition.	To assess sufficient condition on the client.
4	Explain to the client about the purpose and the procedure.	Providing information fosters co-operation.
5	Screen the patient.	To protect the clients privacy.
6	Placing the appropriate position. 1) Move the client to prone position or a lateral position with knees flexed. 2) Spread the mackintosh under the client's body.	To make him / her comfortable and provide the care easily. To avoid soiling of the linen.
7	Identifying the injection site (ventrogluteal site of buttocks)	To administer the medication correctly.
8	Tap the skin (at the injection site) for approximately 5seconds with palmer aspect of the hand.	To relax the muscle.

S.NO.	STEPS	RATIONALE
9	Wipe the skin with spirit and dry thoroughly.	To prevent cross infection.

10	Uncap the syringe and make a " V" with thumb and other four fingers with non dominant hand.	To identify the correct injection site.
11	Tap the skin at injection site for 3times with dominant hand.	To get an anesthetic feel or not feel pain at time of injection.
12	Inserting the needle in ventrogluteal site of buttocks within 4 seconds of tapping.	To minimize the pain.
13	Aspirating the syringe and check if any blood is appears, if no blood comes give the medication slowly by pushing the piston.	To prevent accidental intravascular deposition of the drug.
14	Remove the needle quickly and tap the skin at injection site again 3 times.	To alleviate the pain.
14	Pain assessment will be done by using MCAFFERY 0-10 numerical pain scale.	To identify the level of pain perception.
15	Wash hands.	To limit transfer of micro organisms.

AFTER CARE

- Make the patient comfortable.
- Remove screen and equipment.
- Inspect the area for bleeding.

- Watch the signs and symptoms of allergic reaction.
- Clean articles with soap and water keep ready for next use.

APPENDIX M